**October 20, 2004**

# MANAGEMENT OF TUBERCULOSIS FOR LDS MISSIONARIES

***=see definition**

## GOALS

1) Identify all prospective missionaries with active tuberculosis before entry into MTC. Prospective missionaries with a diagnosis of active tuberculosis* will have mission service deferred until such time as successful treatment of disease* is documented.
2) Identify all missionaries with active tuberculosis at entry into the MTC. Provide infection control, diagnostic services, and appropriate therapy.
3) Identify all prospective missionaries with latent tuberculosis infection* (LTBI). All missionaries with LTBI meeting treatment criteria* will be offered treatment during their mission service, including surveillance for adverse drug reactions*.
4) Identify all returning missionaries with LTBI. All returning missionaries with LTBI will be referred for treatment per the standard of care in their home communities.
5) Identify all missionaries who develop active tuberculosis during mission service, provide initiation of proper therapy, and arrange for a medical release, if appropriate.
6) Identify all missionaries at risk for LTBI during mission service, provide or arrange for appropriate skin testing, and offer LTBI treatment as indicated, including surveillance for adverse drug reactions.
7) Maintain statistical records of rates of LTBI and active cases of tuberculosis among missionaries and report to public health authorities as appropriate.

## DEFINITIONS

1) Active tuberculosis: M. tuberculosis culture (+) OR sputum (+) for acid fast bacilli OR positive reaction to tuberculin skin test (TST) AND clinical and/or radiographic evidence of current disease (see #2 below)
2) Symptoms and signs of tuberculosis: cough for more than 3 weeks, fever, fatigue, unexpected weight loss, coughing up blood, chest pain, loss of appetite, or night sweats
3) Latent tuberculosis infection (LTBI): a positive TST in a person who does not otherwise meet the case definition for active tuberculosis
4) Positive tuberculin skin test (TST) (using 5 TU and Mantoux method per CDC where available; 2TU is acceptable in countries without 5TU on the formulary; the tine test is not acceptable): Category A: 5 mm induration for persons at highest risk for active tuberculosis [HIV infected, close contact* of a documented active tuberculosis case, radiographic evidence (fibrosis) of prior TB disease, current steroid therapy (the equivalent of 15 mg/day prednisone for at least 1 month), or organ transplant recipient or other immunosuppressed person]; Category B: 10 mm induration for persons at high risk for active tuberculosis [injection drug use, documented TST conversion to positive within past two

years, association with a high risk congregate setting*, or having one or more TB risk medical conditions*]; Category C: 15 mm induration for persons at low risk for active tuberculosis (i.e., not in either Category A or B). For returning missionaries, all of whom should have had a pre-mission TST, an increase of induration of 10 mm or greater over the initial TST result will be considered evidence of a positive TST. If the result of the initial TST is not known, apply the rules of assessment by risk category described above.

5) Close contact with an active tuberculosis case: at least 12 hours total in the same household or room with a documented active TB case, even if accumulated over several visits
6) TB risk medical conditions: diabetes mellitus, silicosis, chronic renal failure, weight loss to more than 10% below ideal body mass index, gastrectomy, jejunoileal bypass
7) High risk congregate setting: residing or working in any of the following institutional settings—hospitals, homeless shelters, correctional facilities, nursing homes, or residential facilities for persons at risk for TB, such as AIDS patients
8) Pyridoxine treatment with isoniazid: given to all missionaries on isoniazid for treatment of LTBI at a dose of 50 mg/day
9) Contraindications for LTBI treatment: for both Isoniazid and Rifampin, a history of any liver condition or evidence of liver dysfunction on serum transaminase evaluation. Missionaries on LTBI treatment should not take more than 4 grams of acetaminophen per day.
10) Surveillance for adverse drug reactions: each time the monthly LTBI medication doses are supplied, the missionary will be questioned about the following symptoms—loss of appetite, nausea, vomiting, dark urine, yellow skin, persistent unusual sensations of the hands or feet, persistent fatigue, fever lasting 3 or more days, abdominal tenderness particularly along the right lower rib cage, easy bruising or bleeding, or joint pain; record answers on LTBI treatment form and have missionary initial
11) Dosage for LTBI treatment: a) isoniazid: 300 mg/day for 9 months (always given with pyridoxine); or b) rifampin: 10 mg/kg (600 mg maximum) given daily for 4 months.
12) Choice of LTBI treatment: a) missionaries whose home or mission is in an area known to have INH resistant TB or who cannot take isoniazid who need LTBI treatment will be placed on rifampin for 4 months; b) missionaries from all other areas of the world who can take isoniazid (see contraindications above) who need LTBI treatment will be treated with isoniazid; c) missionaries who cannot take either rifampin or isoniazid or who have been exposed to multiple drug resistant strains of tuberculosis who need LTBI treatment will receive treatment recommended by a TB physician specialist on the Missionary Public Health/TB subcommittee
13) LTBI treatment criteria: Missionaries in Categories A or B risk (see definition #4) who have LTBI are strongly encouraged to take LTBI treatment as directed (and may have mission service deferred if treatment is refused). Missionaries in Category C risk will not be offered LTBI treatment unless it is the standard of care where they are serving. However, all missionaries must comply with public

health regulations in effect wherever they are serving, including any local requirements to report and receive treatment for LTBI.

14) Successful Tuberculosis Treatment: documented completion of a treatment regimen approved by the American Thoracic Society (2002 Consensus Report) with exceptions for alternative standards of care prevailing in an affected missionary's home country
15) Active Tuberculosis and Airline Travel: LDS missionaries with active tuberculosis will not be transported until treatment response renders them non-infective. If a missionary with newly identified active tuberculosis has traveled by air with a flight time greater than 6 hours during the symptomatic period, notice of the event will be given to the relevant airline.

METHODS

1) All **prospective missionaries** will receive a medical examination (including a history, physical examination, and TST) at the time of application for mission service. Persons with active tuberculosis will be referred for treatment and will not be considered for missionary service until such time as successful treatment for disease is documented by a written statement from a competent medical authority. Prospective missionaries with LTBI who are low risk (Category C) for developing TB should be offered the option for treatment if at little risk for drug toxicity. Those choosing to forgo treatment must sign a statement indicating that they accept the risk inherent in refusing therapy. All senior missionaries should have a two-step tuberculosis skin test if clinically indicated. Mission assignment should not be effected by the presence of LTBI in a low risk person. Missionaries with Category A or B risk LTBI should be placed on appropriate therapy before departing for their initial mission assignment. Mission assignments should include consideration of each missionary's individual medical needs.
2) All **missionaries arriving at an MTC** to begin mission service who have lived in a country with high prevalence of tuberculosis during the past 5 years will be asked to undergo tuberculosis screening, including: a) interview for symptoms of active tuberculosis*; b) tuberculin skin testing; c) chest x-ray; and d) other clinical studies as indicated. Missionaries who have signs and/or symptoms of active tuberculosis will be isolated until the diagnosis is ruled out or they have received 2 weeks of four drug therapy with clinical response. All cases of active tuberculosis identified at an MTC will be reported to the Public Health Committee and to the appropriate local public health authority. Management of active cases of tuberculosis in the mission field may require a medical release.
3) **Missionaries who develop active tuberculosis while serving** will be managed per American Thoracic Society/Center for Disease Control protocols (2002) with advice from the assigned physician tuberculosis specialist on the Missionary Tuberculosis Committee, unless local standards of care supervene. They may be medically released as soon as they pose no risk to others while in transit home. The responsible area medical advisor will report each case of active tuberculosis to the Public Health Committee and will conduct a tuberculosis contact investigation (TST 3 months after initial case identification for all close contacts*

of the affected missionary who are known TST negative) in order to identify and treat any other missionaries with active disease, identify and treat missionaries with LTBI, and discover, if possible, the source of the tuberculosis infection.

4) **Upon their departure from their assigned mission all missionaries** will receive a copy of the "Missionary Tuberculosis Screening Report" with instructions from the Mission President to arrange for tuberculosis skin testing as soon as possible after return to home. All returning missionaries should have a tuberculin skin test (including those with a history of positive TST and/or BCG vaccination, unless contra-indicated by history of strongly positive TST). Those whose TST results are positive may require further diagnostic studies and/or treatment, which will be the responsibility of the missionary's family in consultation with their local health care provider and/or public health department. A copy of the "Missionary Tuberculosis Screening Report" should be sent to the Church Health Services, as indicated on the form.

DUTIES

1) MTC Medical Directors: Maintain adequate supplies of 5TU PPD (properly stored), syringes, and other items needed to conduct TST on all missionaries from countries with high prevalence of tuberculosis. Develop and follow protocols for interviewing each missionary at risk for symptoms of tuberculosis. Prepare adequate facilities for isolation of missionaries who appear to have active tuberculosis. Arrange for necessary clinical investigation of all possible cases of active tuberculosis in order to definitively establish or rule out that diagnosis. Maintain supplies of necessary medications for treatment of both active tuberculosis and LTBI. Report each case of active tuberculosis and LTBI to the Missionary Public Health Committee. Make treatment decisions in consultation with the assigned TB physician specialist on the Missionary PH/TB subcommittee. Develop and follow protocols for treatment of LTBI (including directly observed therapy and surveillance for adverse drug effects). Inform all area medical advisors of missionaries coming to their area on LTBI treatment.
2) Area Medical Advisors: Maintain access to adequate supplies of PPD, syringes and other items needed to conduct TST for all missionaries with close contact to a documented active case of tuberculosis. Arrange for clinical investigation of all missionaries exhibiting symptoms of active tuberculosis in order to definitively establish or rule out that diagnosis. Maintain (or have access to) supplies of necessary medications for treatment of both active tuberculosis and LTBI. Assure that each missionary with LTBI identified during contact investigation has a chest radiograph. Make treatment decisions in consultation with the assigned TB physician specialist on the Missionary PH/TB subcommittee. Train mission office staff to follow protocols for treatment of LTBI, including direct observed therapy and surveillance for adverse drug reactions. Assure that Mission Office staff will stop LTBI therapy if adverse drug reaction is suspected. Clinically investigate all possible cases of adverse drug reactions among missionaries on LTBI. Continually remind all Mission Office staff to issue to each missionary at the time of release and departure a copy of the "Missionary Tuberculosis

Screening Report" with appropriate instructions. Report each case of active tuberculosis and LTBI to the Missionary Public Health Committee. Report the findings of each tuberculosis investigation to the Missionary Public Health Committee.

3) Mission Office staff (it is anticipated that the Mission President's wife will often take primary responsibility for the following duties): Through the area medical advisor, assure an adequate supply of LTBI treatment medications for missionaries serving in the mission. Stop LTBI treatment if adverse drug reactions are suspected. Report monthly to the area medical advisor concerning LTBI treatments and surveillance for adverse drug reactions by forwarding completed form for each missionary on LTBI treatment. Report immediately to the area medical advisor each suspected case of active tuberculosis (a missionary with symptoms of tuberculosis). Provide each missionary a copy of the "Missionary Tuberculosis Screening Report" at the time of release and departure from the mission field, with instructions to arrange for TST upon arrival at home.
4) Tuberculosis physician specialist on the Missionary Public Health/Tuberculosis subcommittee: Maintain current knowledge of tuberculosis treatment and diagnosis (American Thoracic Society, CDC). Maintain regular contact with area medical advisors and MTC medical directors in assigned regions. Respond to questions about tuberculosis by end of next business day (if possible). Participate and accept assignments at monthly subcommittee meetings.
5) Tuberculosis nurse specialist on Missionary Public Health/Tuberculosis subcommittee: Assure availability of medications and supplies for missionary tuberculosis program worldwide. Maintain records of LTBI treatment of missionaries received from area medical advisors worldwide. Assure AMAs and mission office staff are advised of incoming missionaries on LTBI treatment. Assure Mission Offices have adequate supplies of "Missionary Tuberculosis Screening Reports". Participate and accept assignments at monthly Tuberculosis Subcommittee meetings.
6) Missionary Tuberculosis Screening Report Coordinator: Receive and compile all missionary Tuberculosis Screening Reports. Provide quarterly and annual summary statistics by area (and as needed by mission) of a) # of missionaries released, divided by home location; b) #/% of missionaries reporting post-mission TB screening; c) #/% of missionaries completing TB screening with positive TST; d) #/% of missionaries with positive TST receiving adequate treatment per ATS protocol, by home location. Attend and participate in monthly TB subcommittee meetings.
7) Chair, Missionary PH/TB subcommittee: Serve as liaison of the subcommittee to the Missionary Public Health Committee. Assure that the Protocols for Management of Tuberculosis for LDS Missionaries (this document) remain current. Assure accuracy of statistical reports for the tuberculosis program. Serve as chair of the monthly TB subcommittee meeting, setting the agenda, and making assignments to committee members. May concurrently serve as a Tuberculosis physician specialist.

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